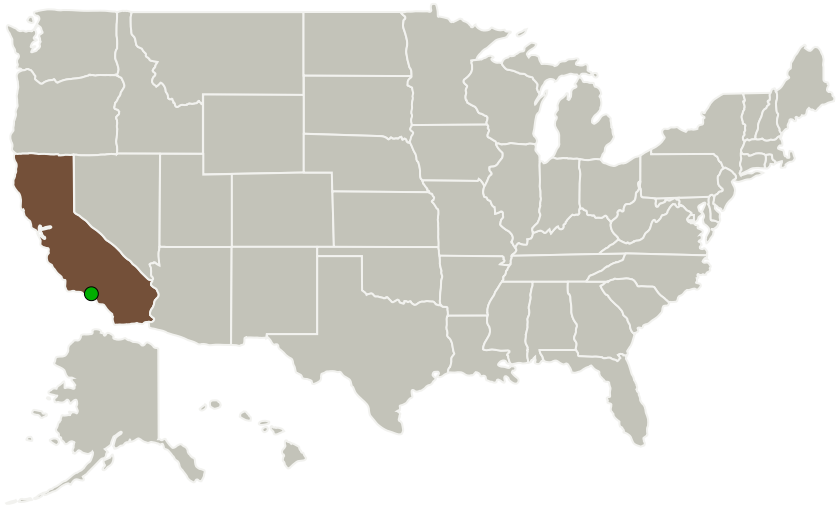
Low Cost Automated Module Assembly for 180 GHz Devices, Phase II

Completed Technology Project (2010 - 2014)

Project Introduction

Despite the obvious advantages of millimeter wave technology, a major barrier to expanded use is high assembly costs due to: need for specialized equipments; need for precision impacts on yields; design technologies for manufacturability; and experienced personnel with demonstrated track records. The challenges of this R&D project are to expand and fully develop the Phase 1 technologies for: ¼ Methods to use common manufacturing equipment to achieve the high accuracy die placement required for millimeter wave frequencies (+/- 5 micron accuracy) ¼ Automation methods and processes to achieving speed and precision for production of low cost modules ¼ Modeling to arrive at cost effective trade-offs for achieving customer specifications with minimum capital investment and labor cost As part of the research, NxGen will conduct a demonstration effort utilizing two existing JPL module designs facilitating the collection statistical data both in terms of yields as well as baseline data for cost estimating.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
NxGen Electronics, Inc.	Lead Organization	Industry	San Diego, California
Jet Propulsion Laboratory(JPL)	Supporting Organization	NASA Center	Pasadena, California

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Table of Contents

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Primary U.S. Work Locations

California

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

NxGen Electronics, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

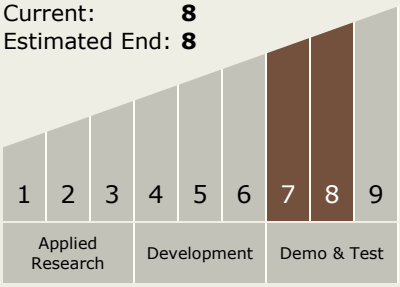
Carlos Torrez

Principal Investigator:

Donald Hayashigawa

Technology Maturity (TRL)

Start: **7**
Current: **8**
Estimated End: **8**



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Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.1 Remote Sensing Instruments/Sensors
    - TX08.1.2 Electronics

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System